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SELF-SEALING CABLE JACKET FOR TELECOMMUNICATIONS OR HIGH-VOLTAGE
CABLES

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SELF-SEALING CABLE JACKET FOR TELECOMMUNICATIONS OR HIGH-VOLTAGE
CABLES

[Selbstdichtender Kabelmantel für Fernmelde- oder Starkstromkabel]

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The invention relates to the self-actuated sealing of cable jackets for telecommunications or high-voltage cables when they are damaged.

Cable cores protected from damage or external influences by cable jackets arranged around the cable cores are known. Known are cable jackets made from metal (e.g., lead, steel, copper, aluminum) and also from plastic (e.g., polyvinylchloride, polyethylene). If necessary, these jackets are protected from mechanical effects by additional iron reinforcement. If the cable jacket becomes damaged, e.g., due to the strike of a pick, such that the entire wall thickness is ruptured at one point, moisture can penetrate into the cable and negatively affect or completely destroy its functionality. On the other hand, it is known that fluids can be "packed" somewhat like powder through so-called microencapsulation. Such a method has been described, e.g., in a

brochure by the National Cash Register Co., Dayton/Ohio, under the keyword "Encapsulation." The capsules of fluid drops can be removed through suitable solvents, when the "packing" is to be undone.

The task of the invention is the self-actuated sealing of cable jackets at positions of damage. For achieving this task, use is made of the mentioned microencapsulation.

The subject matter of the invention is a self-sealing cable jacket for telecommunications or high-voltage cables with the characteristic that at least one microencapsulated fluid, which has the property of transforming into the solid state through chemical reaction after decapsulation, is arranged on the inside of the cable jacket. For example, the two typical components for producing polyurethane foam can be arranged separated and microencapsulated under the cable jacket in the necessary mixture ratio. In the case of damage to the cable jacket (e.g., due to the strike of a pick), capsules of the two component droplets are opened or are dissolved directly and/or due to penetrating moisture, so that the exposed amounts react with each other and the generated polyurethane foam automatically seals the position of the cable jacket that is no longer sealed.

Other known fluids act accordingly, which react by themselves or in corresponding mixture ratios by transforming into the solid state when the encapsulated state is undone.

The fluid microcapsules can also be embedded in special bands in order to arrange them around the cable core or can be adhered without these bands onto the surface of the cable core. Foam-generating fluids have the advantage in the scope of the invention that they fill up holes created by damage to the cable jacket better than fluids that assume after transformation into the solid state a volume that is practically no larger than before the transformation.

Claims

1. Self-sealing cable jacket for telecommunications or high-voltage cables, characterized in that at least one microencapsulated fluid, which has the property of transforming into the solid state through chemical reaction after decapsulation, is arranged on the inside of the cable jacket.
2. Cable jacket according to Claim 1, characterized in that the microencapsulated fluid can be decapsulated directly through pressure and/or through moisture.
3. Cable jacket according to Claims 1 and 2, characterized in that the microencapsulated fluid is arranged in special bands around the cable core.
4. Cable jacket according to Claims 1 and 2, characterized in that the microencapsulated fluid is adhered onto the cable core.
5. Cable jacket according to Claims 1-3 or 1, 2, and 4, characterized in that two known components for producing polyurethane are used as the microencapsulated fluids.